

REMARKS/ARGUMENTS

Claims 1, 2, 5, 6, and 8-33 remain pending in this application. Claims 1, 2, 5, 6, 13, 19, 25, 26, 27 and 33 have been amended in the foregoing claim amendments.

Double Patenting

Claims 1, 2, 5, 6, 8-33 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 and 35-39 or copending Application No. 11/680,740.

Applicant does not agree with the double patenting rejections. Nevertheless, the current claim amendments render the current claims patentably distinguishable over copending Application No. 11/680,740. Accordingly, given the current claim amendments, the double patenting rejections should now be moot.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 2, 5, 6 and 8-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,633,839 to Kushner et al. (“Kushner”) in view of U.S. Patent No. 6,581,032 to Gao et al. (“Gao”). Applicant does not agree with the claim rejections, and reserves the right to present the rejected claims again at a later time. Nevertheless, in order to overcome the rejections and more clearly distinguish the teaching in the applied prior art, Applicant has amended the claims.

As amended, claim 1 now recites a subscriber unit comprising a feature extraction module configured to extract a plurality of features of a speech signal, the plurality of features being used for voice recognition, and a voice activity detection (VAD) module configured to detect voice activity within the speech signal, to divide the speech signal into speech frames and non-speech frames, wherein speech is detected in the speech frames and speech is not detected in the non-speech frames, to provide VAD information comprising an indication of detected voice activity, and to generate output including the speech frames and excluding the non-speech frames. In addition, the subscriber unit of claim 1 also comprises a wireless transmitter coupled to the voice activity detection module and configured to transmit the VAD information comprising the indication of detected voice activity and the output that includes the speech frames and excludes the non-speech frames over a wireless network to a voice recognition device in a distributed voice recognition

system. According to amended claim 1, the VAD information is transmitted over a separate channel than the output to identify the non-speech frames that were excluded from the output. Similar amendments were made to each of the pending independent claims.

The changes to claim 1 (and similar changes to the other independent claims) find support from Applicant's specification in paragraph [0069] from the published versions of the application, which is reproduced below:

[0069] In yet another embodiment, only speech frames are transmitted to the server. Thus, frames with silence are dropped completely. Since only speech frames are transmitted to the server, the server needs a way to determine that the user has finished speaking. This is irrespective of the value of latencies k, j and n. Consider a multi-word like "Portland <PAUSE> Maine" or "617-555-<PAUSE> 1212". A separate channel is used to transmit VAD information. FE features corresponding to the <PAUSE> region are dropped at the subscriber unit and the server would have no information to deduce that user has finished speaking without the separate channel. This embodiment has a separate channel for transmitting VAD information.

This passage discloses an embodiment in which only the speech frames are transmitted from the subscriber unit to the server, where frames with silence (e.g., non-speech frames) are dropped completely. Accordingly, in this case, the output includes the speech frames and excludes the non-speech frames.

In addition, in the embodiment described in paragraph [0069], there is a separate channel used to transmit the VAD information. As explained in paragraph [0069], without this separate channel, the server would have no information to deduce that the user has finished speaking. For example, since non-speech frames corresponding to a pause are dropped and not transmitted, the server would have no way to know that these frames were excluded from the output, unless such information is conveyed somehow. Therefore, the amended claims now recite the VAD information is transmitted over a separate channel than the output to identify the non-speech frames that were excluded from the output. In

this way, a server will be able to deduce the presence of such non-speech frames, even though such non-speech frames are excluded from the output.

In view of these modifications to the claims, Applicant respectfully requests reconsideration and allowance of all pending claims. Nothing in the applied references discloses or suggests any techniques that transmit output that includes the speech frames and excludes the non-speech frames, and also transmits VAD information over a separate channel than the output in order to identify the non-speech frames that were excluded from the output. Given these clarifications to the claims, all rejections have been overcome.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

Dated: March 05, 2010

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